and the secondary reference, U.S. Patent 6,018,275 to Perrett et al., does not supply the missing teachings. Accordingly, Applicants respectfully request that the Examiner take a second look at the rejection of independent Claims 1 and 21, and to allow all of the pending claims, in view of the following remarks.

In particular, rejected independent Claims 1 and 21 are system and method analogs of one another, so that only system Claim 1 will be analyzed. Claim 1 recites:

> 1. A modulation system comprising:
> a digital signal processor that generates in-phase, quadrature-phase and amplitude signals from a baseband signal;
> a modulator that modulates the in-phase and quadrature-phase signals to produce a modulated signal;
> a phase locked loop that is responsive to the modulated signal, the phase locked loop including a controlled oscillator having a controlled oscillator output; and
> an amplifier having a signal input, an amplitude control input and an output, wherein the signal input is responsive to the controlled oscillator output and the amplitude control input is responsive to the amplitude signal. (Emphasis added.)

Claim 1 stands rejected as being obvious over Pakonen Hannu in view of Perrett et al. With respect to Pakonen Hannu, the Official Action states at Page 2:

> As per claims 1 and 21, Pakonen Hannu discloses a modulation method and apparatus fig. 3 having a DSP 1 that generates an amplitude signal A and a phase and a phase/frequency signal PHI see page 4 paragraph 0020, a modulator (20) for modulating the "PHI" signal to produce a modulated signal; a PLL circuit (11, 21, 22, 10 and 23) including a VCO 10 having a controlled output; an amplifier 5, having a signal input to receive the controlled output an amplitude control input responsive to the amplitude signal see fig 3. Pakonen Hannu only teaches that the DSP processes I and Q signals does not explicitly teach that it generates I and Q signals to be process[ed] by the modulator 20. (Emphasis added.)

However, Applicants respectfully submit that Pakonen Hannu teaches away from the recitations of Claim 1. In particular, the cited paragraph, Paragraph 0020 of Pakonen Hannu, states:

> First, the information signal is rendered, by applying DSP (Digital Signal Processing) to the I and Q values of a complex baseband information signal, into the A of the amplitude modulation control signal and the phi of the phase/frequency modulation control signal. Thus the control signal A describes the amplitude of the signal, and the phi describes its frequency and phase. These control signals obtained from the digital signal processor are converted to analog form in a D/A converter. (Emphasis added.)

Thus, as clearly stated in Pakonen Hannu, separate in-phase and quadrature-phase values are combined to provide an amplitude modulation control signal and a phase/frequency modulation control signal.

In sharp contrast, as recited in Claim 1, three signals are generated from a baseband signal: in-phase, quadrature-phase and amplitude. Moreover, as recited in the above-underlined recitations of Claim 1, the three signals are separately processed. In particular, the modulator modulates the in-phase and quadrature-phase signals, and the amplitude signal is provided to the amplitude control input of the amplifier. Accordingly, Pakonen Hannu describes combining the processing of two signals, whereas the present application describes processing the three signals separately. Accordingly, Pakonen Hannu teaches away from that which is claimed in Claim 1.

Nor does Perrett et al. describe the missing teachings. In particular, the cited passage of Perrett et al., Column 7, lines 27-31, states:

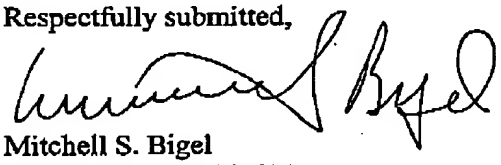
> An example of such a modulation scheme is $\pi/4$ quadrature phase shift keying (QPSK). Typically, this scheme involves decomposing the baseband signal into a complex signal and modulating it onto the carrier.

This passage describes that a baseband signal can be decomposed into a complex signal and modulated onto a carrier. This passage does not say anything about the generation of in-phase, quadrature-phase and amplitude signals from a baseband signal. Moreover, assuming, for the sake of argument, that this passage does refer to in-phase, quadrature-phase and amplitude signals, these two sentences of Perrett et al. would not be combinable with Pakonen Hannu without contradicting the explicit teachings of Pakonen Hannu. Thus, even if it is desirable to reduce bandwidth for transmission, as described by Perrett et al. at Column 7, lines 26-27, it would not be obvious to take the above-quoted isolated passage from Perrett et al. and substitute this passage into Pakonen Hannu in direct contradiction to the explicit teachings of Pakonen Hannu, with the potential of thereby rendering Pakonen Hannu inoperative.

Accordingly, Claim 1 is patentable over Pakonen Hannu in view of Perrett et al. Analogous independent method Claim 21 is patentable for the same reasons that were described above. Dependent Claims 6-10 and 27-29 are patentable at least per the patentability of independent Claims 1 and 21 from which they depend.

In conclusion, Applicants again thank the Examiner for the indication that Claims 11-20 and 30-38 are allowed, and Claims 2-5 and 22-25 are allowable. Applicants have now shown, however, that rejected Claims 1, 6-10, 21 and 26-29 are patentable over the cited references and, therefore, request allowance of all pending Claims 1-38.

Respectfully submitted,



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